# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| EXAMINER |
|---|
| KAO, JUTAI |

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| 2416 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| | Application No. | Applicant(s) |
|---|---|---|
| | 10/538,833 | BOSSI ET AL. |
| **Office Action Summary** | Examiner | Art Unit | |
| | JUTAI KAO | 2416 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)☒ Responsive to communication(s) filed on <u>24 July 2008</u>.

2a)☒ This action is **FINAL**.          2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)☒ Claim(s) <u>16-23 and 25-30</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>16, 21, 23, 25 and 29</u> is/are rejected.

7)☒ Claim(s) <u>17-20, 22, 26-28 and 30</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

## Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>24 July 2008</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

## DETAILED ACTION

### *Response to Amendment*

Amendments filed on 07/24/2008 have been entered into prosecution. The amendments cures the drawings objections and 35 USC 101 rejections raised in the previous actions. The corresponding objections and rejections have been withdrawn.

### *Response to Arguments*

1.      Applicant's arguments filed 07/24/2008 have been fully considered but they are not persuasive.

The applicant argues that previous rejection does not show "a complexity function calculated as the ratio between <u>a sum of complexity factors</u> relative to the network elements of the network configuration currently considered and said probability function". Specifically, the applicant argues that the cited prior art, Chaffee, only disclose an average cost metric $C_{jk}$ as a function of a single cost metric $c_{jk}$. However, as shown in the previous action, the cost metric $c_{jk}$ is the sum of two cost metric, or a sum of two complexity factors, $c_j(M)$ and $c_k(A)$, respectively (see paragraph [0050]). Therefore, Chaffee does show a sum of complexity factors as required by the claim and the argument is therefore not persuasive. The original rejections are maintained and the action is made FINAL.

## *Claim Rejections - 35 USC § 103*

2.      The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

3.      This application currently names joint inventors.  In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary.  Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

4.      Claim 16, 21, 23, 25 and 29 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Klincewicz (US 2004/0095887) in view of Chaffee (US

2002/0186665) and Kumaran (US 2002/0097716).

Klincewicz discloses a method for designing a network including the following

features.

Regarding claim 16, a method of designing a transport network for routing a

plurality of routable flows, having a plurality of network elements (see nodes in Fig. 3)

and a plurality of connections between said network elements (see connections in Fig.

3), the method comprising: defining a first network configuration (see initial topology

shown in item 415 in Fig. 4) and at least one alternative network configuration (see

"eliminating and/or adding any given link" recited in paragraph [0025], that is, a modified

version of the initial topology being the alternative topology); comparing the complexity

functions of said first and any alternative network configurations, for choosing a network

configuration having a lowest complexity value (see "drops disadvantageous

links...calculating the savings (in terms of cost...) obtained...link with the greatest

positive savings..." recited in paragraph [0047]; or see "reduce a cost of the network"

recited in paragraph [0025]; that is, the invention teaches selecting configuration of the

lowest cost, wherein cost represents the claimed complexity function/value).

Regarding claim 23, a computer readable medium comprising computer program

code executable by a computer, the computer program code configured to perform a

method of designing a transport network for routing a plurality of routable flows, having

a plurality of network elements (see nodes in Fig. 3) and a plurality of connections

between said network elements (see connections in Fig. 3), the method comprising:

defining a first network configuration (see initial topology shown in item 415 in Fig. 4)

and at least one alternative network configuration (see "eliminating and/or adding any

given link" recited in paragraph [0025], that is, a modified version of the initial topology

being the alternative topology); comparing the complexity functions of said first and any

alternative network configurations, for choosing a network configuration having a lowest

complexity value (see "drops disadvantageous links...calculating the savings (in terms

of cost...) obtained...link with the greatest positive savings..." recited in paragraph

[0047]; or see "reduce a cost of the network" recited in paragraph [0025]; that is, the

invention teaches selecting configuration of the lowest cost, wherein cost represents the claimed complexity function/value).

Regarding claim 25, a device (see network design module 140 in Fig. 1) for designing a transport network for routing a plurality of routable flows, having a plurality of network elements (see nodes in Fig. 3) and a plurality of connections between said network elements (see connections in Fig. 3), the method comprising: a network configuration unit (see network design module 140 in Fig. 1) for defining a first network configuration (see initial topology shown in item 415 in Fig. 4) and at least one alternative network configuration (see "eliminating and/or adding any given link" recited in paragraph [0025], that is, a modified version of the initial topology being the alternative topology); a complexity evaluation unit (see network design module 140 in Fig. 1) for comparing the complexity functions of said first and any alternative network configurations, for choosing a network configuration having a lowest complexity value (see "drops disadvantageous links...calculating the savings (in terms of cost...) obtained...link with the greatest positive savings..." recited in paragraph [0047]; or see "reduce a cost of the network" recited in paragraph [0025]; that is, the invention teaches selecting configuration of the lowest cost, wherein cost represents the claimed complexity function/value).

Regarding claim 21and 29, wherein said step of comparing the complexity functions is performed calculating said complexity function for each network configuration considered (see comparison step 430 in Fig. 4 and corresponding texts in the specification, where the system decide between the alternative network and the

current network using the cost function) in correspondence of an estimated maximum

number of routable flows in said transport network (Chaffee and Kumaran below

disclose how the cost function is calculated using a probability function that takes into

account of an estimated maximum number of routable flows).

Klincewicz does not disclose the following features: regarding claim 16, 23 and

25, calculating for each of said first and any alternative network configuration, a

probability function representing, for each maximum number of routable flows, the

probability of routing such a number of flows in the network configuration currently

considered; and calculating for each of said first and any alternative network

configuration, a complexity function calculated as the ratio between a sum of complexity

factors relative to the network elements of the network configuration currently

considered and said probability function.

Chaffee discloses a method of efficient path learning in network including the

following features.

Regarding claim 16, 23 and 25, calculating for each of said first and any

alternative network configuration, a probability function representing the probability of

routing such a number of flows in the network configuration currently considered (see

"$P_{jk}$" recited in paragraph [0052], which represents the probability that a transmit-

acknowledge cycle will be successfully completed; that is, a probability of successfully

routing a flow); and calculating for each of said first and any alternative network

configuration, a complexity function (see "$C_{jk}$" recited in paragraph [0055], which

represents the communication cost factor of the network cost; that is, this value could

be used as the cost parameter of Klincewicz's invention) calculated as the ratio between

a sum of complexity factors relative to the network elements of the network

configuration currently considered (see "$c_{jk}$", which is the sum of "$c_j(M)$ " and "$c_k(A)$" as

shown in paragraph [0050]) and said probability function (see $C_{jk}$ being equal to the

ratio of $c_{jk}$ and $P_{jk}$).

Kumaran discloses a method for processing of regulated connection in a

communication network including the following features.

Regarding claim 16, 23 and 25, calculating for each of said first and any

alternative network configuration, a probability function representing, for each maximum

number of routable flows, the probability of routing such a number of flows in the

network configuration currently considered (see "L denotes the packet loss probability",

which is calculated for "N denotes the maximum number of supportable connections",

recited in claim 9; that is, L represents a probability function of transmission success

that takes into account of the maximum number of routable flow).

It would have been obvious to one of the ordinary skill in the art at the time of the

invention to modify the system of Klincewicz using features, as taught by Chaffee and

Kumaran, in order to provide good representation of the cost function.


***Allowable Subject Matter***

5.      Claims 17-20, 22, 26-28 and 30 are objected to as being dependent upon a

rejected base claim, but would be allowable if rewritten in independent form including all

of the limitations of the base claim and any intervening claims.

## *Conclusion*

6.      **THIS ACTION IS MADE FINAL.**  Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action.  In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action.  In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to JUTAI KAO whose telephone number is (571)272-9719.

The examiner can normally be reached on Monday ~Friday 7:30 AM ~5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kwang Yao can be reached on (571)272-3182.  The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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